

TERRESTRIAL ISOPODA COLLECTED IN JAVA BY DR.
EDWARD JACOBSON WITH DESCRIPTIONS OF FIVE
NEW SPECIES.

By HARRIET RICHARDSON SEARLE,

Collaborator, Division of Marine Invertebrates, United States National Museum.

The following is a report on a collection of terrestrial isopods sent to me by Dr. Edward Jacobson. The specimens are all from the island of Java, and were taken during the years 1909 to 1911. They represent several new species, as well as a number of described species.

The new species are: *Cubaris insularis*, *Toradjia dollfusi*, *Philoscia jacobsoni*, *Philoscia javanensis*, and *Philoscia budde-lundi*.

Among the known species, *Cubaris murina* Brandt has previously been recorded by Dollfus from Java and was noted by Budde-Lund in an unpublished list of terrestrial Isopods from Java, which is given below. *Porcellio sundaicus* and *Porcellio modestus* were described by Dollfus in his report on the Isopods from the Dutch East Indies.

The altitude of the collecting localities is as follows: Semarang, 55 meters; Nusa Kambangan, 50 meters; Djocja, 113 meters; Nongkodjadjar, 1,200 meters; Gunung Gedeh, 1,200 to 1,400 meters.

Dr. E. Jacobson requested me to mention in this paper that a small collection of Isopoda had formerly been sent by him to the late Dr. G. Budde-Lund (Copenhagen), who left a report on this collection which was, however, not published.

The collection contained the following species:

Cubaris murina Brandt, Krakatau, May, 1908, and Bataira, January, 1909.

Nagara cristata (Dollfus), Krakatau, May, 1908.

Nagara nana Budde-Lund, Semarang, December, 1909.

Alloniscus brevis Budde-Lund, Krakatau, May, 1908.

Setaphora weberi Dollfus, Semarang, December, 1909; Batavia, January, 1909.

Kisuma papillosa Budde-Lund, new species.¹

This collection is now in the British Museum but I have not as yet had an opportunity of examining it.

¹ This species was published in, Notes from the Leyden Museum, vol. 34, 1912, pp. 169-170, pl. 8.

It is interesting to note that *Cubaris murina* (Brandt) is the only species found in both collections, the earlier one sent to Budde-Lund and the later collection sent to me, of which this is the report.

Although most of the species in the earlier collection identified by Budde-Lund are known species, some of them had not yet been recorded from Java. The locality Krakatau is certainly new, as this island got a new fauna after the eruption of 1883.

Genus CUBARIS Brandt.

CUBARIS MURINA Brandt.

Cubaris murina BRANDT, Bull. Soc. Imp. Nat. Moscou, vol. 6, 1833, p. 23.

Cubaris brunnea BRANDT, Bull. Soc. Imp. Nat. Moscou, vol. 6, 1833, p. 28.

Armadillo murinus MILNE EDWARDS, Hist. Nat. des Crust., vol. 3, 1840, p. 179.

Armadillo brunneus MILNE EDWARDS, Hist. Nat. des Crust., vol. 3, 1840, p. 179.

Armadillo conglobator BUDDE-LUND, Prosp. generum specierumque Crust. Isop. Terrestrium, 1879, p. 7.

Armadillo murinus BUDDE-LUND, Prosp. generum specierumque Crust. Isop. Terrestrium, 1879, p. 7; Crust. Isop. Terrestris, 1885, pp. 27-28.—DOLLFUS, Zool. Ergebnisse einer Reise in Niederländisch Ost-Indien, vol. 4, Heft 2, 1907, p. 359.

Locality.—Semarang, Java; 1 specimen.

CUBARIS INSULARIS, new species.

Plate 1, fig. 1.

Body ovate, surface smooth. Color in alcohol yellow, with reddish brown dots, forming a double irregular median band and a band on either side of the body, within the lateral parts of the segments. A few of these dots are scattered over the light areas of the body.

The head is much wider than long, with the eyes small and composed of a few ocelli situated in the post-lateral angles. The anterolateral lobes are small and the front straight. The second pair of antennae have the flagellum composed of two articles, the second of which is about three times as long as the first.

The first segment of the thorax is about twice as long in the median line as any of the following, which are subequal. The coxopodite is represented by a small notch at the posterior extremity of the segment; it is not distinct or divergent from the segment. The second thoracic segment has a distinct coxopodite on the anterior half of the underside of the segment, represented by a small lobe near the lateral margin.

The first two segments of the abdomen have the lateral parts covered by the last thoracic segment. The following segments continue the oval outline of the body. Terminal abdominal segment about one and a half times wider at the base than at the extremity, with the sides excavate and the extremity roundly truncate. The basal article of the uropoda reaches the extremity of the terminal

abdominal segment, and is just a little longer than wide. The inner branch is not visible in a dorsal view, as it extends only about three-quarters of the length of the segment. The outer branch is small and is inserted about the middle of the inner lateral margin of the basal article (in a dorsal view).

Eleven specimens come from Nongkodjadjar, Java, and one specimen is from Nusa Kambangan, Java.

This species is close to *Cubaris rectifrons* (Dollfus), but differs from it in the form of the coxopodites of the first thoracic segment, which are represented only by a notch at the post-lateral angle of the segment, while in *C. rectifrons*, they are distinctly separated on the posterior quarter of the segment and neatly divergent. The inner branches of the uropoda are also slightly longer in the new species and the outer branch situated not at the extremity of the basal article, but about half the distance of the inner margin of the basal article.

The type is in the United States National Museum (Cat. No. 54474). The cotype is in the Leyden Museum.

Genus TORADJIA Dollfus.

TORADJIA DOLLFUSI, new species.

Plate 1, fig. 2.

Body oval, contractile into a ball, $5\frac{1}{2}$ mm. : 9 mm. Surface, smooth; color in alcohol mottled brown and yellow.

Head large, quadrangular, about twice as wide as long, 2 mm. : 1 mm. Epistome furnished with a high carina, narrow and sharp, which forms on the dorsal side of the head a sharp triangular projection between the produced ocular lobes. Dorsal surface of head smooth, not carinate. Antero-lateral angles of the ocular lobes not rounded. Eyes small, with about twelve ocelli. First pair of antennae minute, composed of two small articles. Second pair short, extending about two-thirds the length of the first thoracic segment; flagellum composed of two articles, the second about twice as long as the first.

The first segment of the thorax is large, about twice as long as any of the six following segments, and has the lateral parts extended and somewhat upcurved with the antero-lateral angles produced as far as the antero-lateral angles of the head. There is a very slight post-lateral fold into which the second segment fits. The three following segments have a thickening on the anterior part of the underside, very indistinct. The first two segments of the abdomen have the lateral parts covered by the last thoracic segment. The lateral parts of the three following segments are produced. The terminal segment is triangular, with the apex well rounded. The uropoda have the basal article large, extending as far as the post-lateral angles of the fifth abdominal segment and beyond the terminal segment. The inner branch is slightly longer than the outer branch, which is inserted on

the inner lateral margin of the basal article, about the middle, and both extend to the extremity of the basal article.

This species is larger than any of the other three known species of the genus described by Dollfus, being 9 mm. in length, while the other three are but 4, 5, and 6 mm. in length. It seems closer to *T. cephalica* Dollfus² than to the other two described by that author. From the figures of the three species shown by Dollfus, the head is carinate on the dorsal side, while in the species just described, the dorsal surface is perfectly smooth. *T. celebensis* and *T. gorgona* both have the body strongly tuberculate, while *T. cephalica* is slightly tuberculate anteriorly. *T. dollfusi* has the body perfectly smooth. Budde-Lund³ mentions a fourth species of this genus, *T. conglobator*, which, in the short description he gives, he refers to it as having the epistome plain. He includes *Periscyphus weberi* Dollfus in this genus.

Eleven specimens of this species were collected at Nongkodjadjar, Java.

The type is in the United States National Museum (Cat. No. 54475). The cotype is in the Leyden Museum.

Genus PHILOSCIA Latreille.

PHILOSCIA JACOBSONI, new species.

Plate 2, fig. 3.

Body more than twice as long as wide, 7 mm. : 3 mm. Color in alcohol brown with irregular markings of a darker brown. Patches of dark brown on the sides of the segments with a light area on either side.

Head about twice as wide as long with the front rounded and not marginate. Eyes small. Antennae are long extending to the end of the fourth thoracic segment; flagellum composed of three articles, the first of which is one and a half times longer than the other two, which are subequal. First segment of thorax longer than any of the following, which are subequal. Seventh segment with the post-lateral angles acute and extending to the end of the fourth abdominal segment.

Abdomen abruptly narrower and deeply immersed in last thoracic segment. First two segments with the lateral parts concealed by the seventh thoracic segment. First five segments subequal in length. Terminal segment triangular with apex acute. Basal article of uropoda extending one-third of its length beyond the extremity of the abdomen. Exterior side canaliculate. Outer branch about twice as long as basal article. Inner branch extends about two-thirds the length of the outer branch.

Three specimens come from Semarang, Java.

¹ Zool. Ergebnisse einer Reise in Niederländisch Ost-Indien, vol. 4, Heft 2, 1907, p. 367, pl. 13, fig. 2, text fig. 12a.

² Proc. Zool. Soc. London, 1902, vol. 2, p. 380.

The type is in the United States National Museum (Cat. No. 54476). The cotype is in the Leyden Museum.

PHILOSCIA JAVANENSIS, new species.

Plate 2, fig. 4.

Body smooth. Color in alcohol uniformly brown, with a somewhat mottled appearance of lighter and darker brown. On the terminal segment of the body are three elongated spots of the lighter brown, one in the middle and one on either side.

The head is about twice as wide as long, with the front not marginate and nearly straight. The eyes are small and situated at the antero-lateral angles, showing but very little in a dorsal view. The second pair of antennae have a flagellum composed of three subequal articles.

The segments of the thorax are subequal, with the exception of the first, which is a little longer than any of those following.

The abdomen is abruptly narrower than the thorax, but is not deeply submerged. The lateral angles of the last thoracic segment reach but little beyond the middle of the third abdominal segment. The first two segments are shorter than the three following, which are subequal in length. The terminal segment is more than twice as wide as long, with the apex very obtusely triangular. The uropods are short; the basal article extends but a short distance beyond the terminal segment with the exterior side canaliculate. The outer branch is about twice as long as the basal article; the inner branch extends to the middle of the outer one.

Two specimens come from Semarang, Java; another mutilated one is from Djocja, Java.

The type is in the United States National Museum (Cat. No. 54477). The cotype is in the Leyden Museum.

PHILOSCIA BUDELUNDI, new species.

Plate 2, fig. 5.

Body oblong ovate. Color in alcohol, brown and yellow. Head and first thoracic segment with small areas of yellow, a larger area in the middle of the segment. The following six segments have the upper half of the segment yellow, the lower half brown with yellow spots. The first two segments of the abdomen are light, with a narrow transverse band of brown; the following three segments are dark with a light area on the upper half about the middle. The terminal segment and outer branch of the uropoda are light; the inner branch is lark.

The head is about twice as wide as long. The eyes are small. The antennae extend to about the end of the third thoracic segment. The flagellum is composed of three articles, the first being a little longer than the second, which in turn is a little longer than the third.

The first segment of the thorax is a little longer than those following which are subequal. The post-lateral angles of the seventh segment are obtuse and extend to about the middle of the third abdominal segment.

The abdomen is narrower than the thorax, with the sides of the first two segments covered by the last thoracic segment. The first five segments are subequal, the terminal segment being triangular with apex acute. The basal article of the uropoda extends half its length beyond the terminal abdominal segment, and is not canaliculate. The outer branch is twice as long as the basal article. The inner branch extends a little beyond the middle of the outer branch.

Four specimens come from Nongkodjadjar, Java.

The type is in the United States National Museum (Cat. No. 54478). The cotype is in the Leyden Museum.

Genus PORCELLIO Latreille.

PORCELLIO SUNDAICUS Dollfus.

Porcellio sundaicus DOLLFUS, Zool. Ergebnisse einer Reise in Niederländisch Ost-Indien, vol. 4, Heft 2, 1907, p. 372, pl. 14, fig. 17.

Locality.—Djocja, Java; one specimen.

PORCELLIO MODESTUS Dollfus.

Porcellio modestus DOLLFUS, Zool. Ergebnisse einer Reise in Niederländisch Ost-Indien, vol. 4, Heft 2, 1907, p. 373, pl. 14, fig. 19.

Localities.—Nongkodjadjar, Java, ten adult specimens and six immature; Djocja, Java, one specimen; Semarang, Java, one specimen; Gunung Gedeh, Java, nine specimens.

LIST OF REFERENCES.

BUDDE-LUND, G. On the Crustacea collected during the "Skeat Expedition" to the Malay Peninsula, by W. F. Lanchester. A list of the Terrestrial Isopods. Proc. Zool. Soc. London, vol. 2, 1902, pp. 379-381.

BUDDE-LUND, G. Isopoda von Madagaskar und Ostafrika. Voeltzkow, Reise in Ostafrika in den Jahren 1903-1905, vol. 2 (Stuttgart), 1908, pp. 265-308, pls. 12-18.

——— Description of a new species of terrestrial isopoda from Java. Notes from the Leyden Museum, vol. 34, 1912, pp. 169-170, pl. 8. (Posthumous, arranged for publication by Dr. Charles Chilton.)

COLLINGE, WALTER E. On some new terrestrial isopods from the Andaman Islands and southern India. Records of the Indian Museum, vol. 10, pt. 3, no. 11 (Calcutta), July, 1914, pp. 207-210, pls. 24, 25.

——— Description of a new species of terrestrial isopoda from Borneo. Records of the Indian Museum, vol. 10, pt. 4, no. 12 (Calcutta), Aug., 1914, pp. 261-262, pl. 35.

——— Description of a new species of Terrestrial Isopoda from India. Ann. Mag. Nat. Hist., ser. 8, vol. 14 (London), Aug., 1914, pp. 206-208, pl. 9.

- COLLINGE, WALTER E. Zoological Results of the *Abor* Expedition, 1911-1912, Terrestrial Isopoda. Records of the Indian Museum, vol. 8, pt. 6, no. 37 (Calcutta), Jan., 1915, pp. 465-469, pls. 31-33.
- Contributions to a knowledge of the Terrestrial Isopoda of India, pt. 1. Records of the Indian Museum, vol. 11, pt. 2, no. 6 (Calcutta), Apr., 1915, pp. 143-151, pls. 4-12.
- Contributions to a knowledge of the Terrestrial Isopoda of India, pt. 2. Records of the Indian Museum, vol. 12, pt. 3, no. 12 (Calcutta), May, 1916, pp. 115-128, pls. 9-19.
- Zoological Results of the *Abor* Expedition, 1911-1912. Terrestrial Isopoda, II. Records of the Indian Museum, vol. 8, pt. 9, no. 44 (Calcutta), Aug., 1916, pp. 544-545, pls. 49, 50.
- Contributions to a knowledge of the Terrestrial Isopoda of Natal, pt. 1. Ann. Natal Museum, vol. 3, pt. 3 (London), May, 1917, pp. 567-585, pls. 40-42.
- Contributions to a Knowledge of the Terrestrial Isopoda of Natal, pt. 2. Ann. Natal Museum, vol. 4, pt. 1 (London), May, 1919, pp. 229-233, pl. 14.
- DOLLFUS, ADRIEN. Sur quelques isopodes du Musée de Leyde. Notes of the Leyden Museum, vol. 11, 1889, pp. 91-94, pl. 5, figs. 1-3.
- Mission scientifique de M. Ch. Alluaud dans le territoire de Diégo-Suarez (Madagascar-Nord), Avril-Août, 1893. Isopodes terrestres recueillis à Diégo-Suarez, à Tamatave et à la Réunion. Mém. de la Soc. Zool. de France, vol. 8 (Paris), 1895, pp. 180-188.
- Voyage de M. E. Simon dans l'Afrique Australe (Janvier-Avril, 1893). Crustacés isopodes terrestres. Mém. de la Soc. Zool. de France, vol. 8 (Paris), 1895, pp. 345-352.
- Isopodes terrestres des Indes Néerlandaises recueillis par M. le Professeur Max Weber et par MM. les Docteurs Fritz et Paul Sarasin (de Bâle). Zool. Ergebnisse einer Reise in Niederländisch Ost-Indien, vol. 4, Heft 2 (Leiden), 1907, pp. 357-382, pls. 13-15.
- STEBBING, T. R. R. Indian Isopods. Records of the Indian Museum, vol. 6, pt. 4, no. 12 (Calcutta), 1911, pp. 179-191, pls. 10-12.

EXPLANATION OF PLATES.

PLATE 1.

FIG. 1. *Cubaris insularis*, new species (× about 8).

(a) Inner lateral margin of first and second thoracic segments showing coxopodites (enlarged).

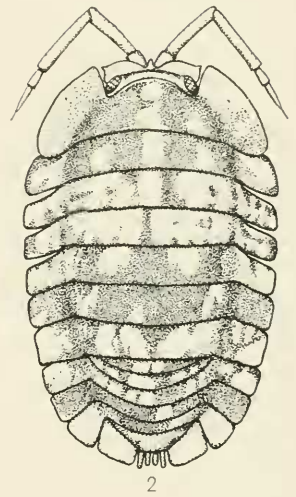
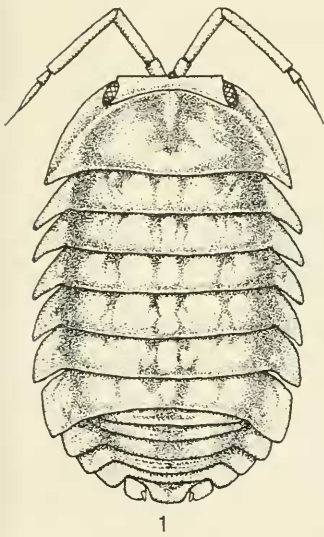
2. *Toradjia dollfusi*, new species (× about 6).

PLATE 2.

FIG. 3. *Philoscia jacobsoni*, new species (× about 10).

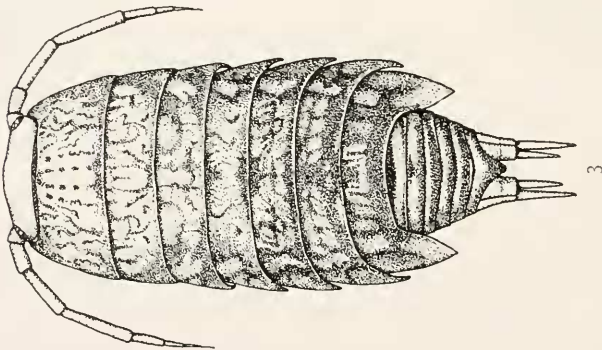
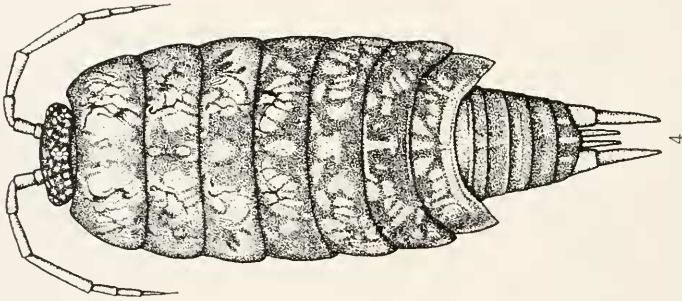
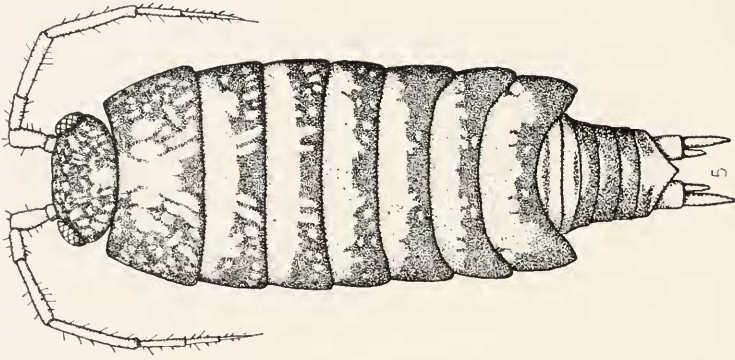
4. *Philoscia javanensis*, new species (× about 14).

5. *Philoscia buddelundi*, new species (× about 20).



NEW TERRESTRIAL JAVAN ISOPODS.

FOR EXPLANATION OF PLATE SEE PAGE 7.



NEW TERRESTRIAL JAVAN ISOPODS.

FOR EXPLANATION OF PLATE SEE PAGE 7.